

Large-Scale Engineering Networks: Robustness, Verifiability, and Convergence

Monday April 15, 2002

- 8:30–9:00 *Check-In/Light Breakfast (Hosted by IPAM)*
- 9:00–9:05 *Welcome and Opening Remarks*
- 9:05–10:15 **William Hall** (Draper Laboratory)
Robustness and the Air Transportation Network
- 10:15–10:45 *Break*
- 10:45–12:00 **David Alderson** (California Institute of Technology)
Cascading Failures in Infrastructure Networks
- 12:00–2:00 *Lunch (on your own)*
- 2:00–3:15 **Banavar Sridhar** (NASA Ames Research Center)
Modeling, Optimization and Control problems in the National Airspace System
- 3:15–3:45 *Break*
- 3:45–5:00 **Claire Tomlin** (Stanford University)
Hybrid Control Problems in Air Traffic Networks
- 5:00–5:30 *Panel Discussion*
- 5:30–7:00 *Wine/Cheese Reception (Hosted by IPAM)*

Tuesday April 16, 2002

- 8:30–9:00 *Continental Breakfast*
- 9:00–10:15 **Jaime Peraire** (Massachusetts Institute of Technology)
A General Lagrangian Formulation for the computation of a-posteriori Finite Element Bounds
- 10:15–10:45 *Break*
- 10:45–12:00 **George Verghese** (Massachusetts Institute of Technology)
Waves, Cascades and Flows: Examples of Dynamics, Control and Estimation in Linear Network Models
- 12:00–2:00 *Lunch (on your own)*
- 2:00–3:15 **Deborah Estrin** (UCLA)
The Century Challenges: Embedding the Internet
- 3:15–3:45 *Break*

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3:45–5:00 **John Doyle** (California Institute of Technology)
Robustness & Verification

5:00–5:15 *Summary*

Wednesday April 17, 2002

8:30–9:00 *Continental Breakfast*

9:00–10:15 **Richard Murray** (California Institute of Technology)
Information Flow and Cooperative Control of Vehicle Formations

10:15–10:45 *Break*

10:45–12:00 **Eric Feron** (Massachusetts Institute of Technology)
Stability and Performance of Networks of Cooperating Vehicles

12:00–2:00 *Lunch (on your own)*

2:00–3:15 **Rahul Sarpeshkar** (Massachusetts Institute of Technology)
Biologically Inspired Electronics

3:15–3:45 *Break*

3:45–5:00 **Lieven Vandenberghe** (UCLA)
Algorithms for convex optimization

5:00–5:15 *Summary*

5:15–7:15 *Dinner (Hosted by IPAM)*

Thursday April 18, 2002

8:30–9:00 *Continental Breakfast*

9:00–10:15 **Lin Xiao** (Stanford University)
Simultaneous Routing and Resource Allocation via Dual Decomposition

10:15–10:45 *Break*

10:45–12:00 *Discussion on Research Topics*

12:00–2:00 *Lunch (on your own)*

2:00–3:15 **Jeff Shamma** (UCLA)
Decomposition for Distributed Control

3:15–3:45 *Break*

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- 3:45–5:00 **Carla Gomes** (Cornell University)
The Integration of Constrained-Based Reasoning and Mathematical Programming Methods
- 5:00–5:15 *Summary*

Friday April 19, 2002

- 8:30–9:30 *Continental Breakfast*
- 9:30–10:15 **Sergio Servetto** (Cornell University)
Queues under feedback control
- 10:15–10:45 *Break*
- 10:45–12:00 *Round Table Discussion*

